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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/599,148	06/21/2000	Stuart T. Linsky	22-0124	6922

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EXAMINER	
DEAN, RAYMOND S	
ART UNIT	**PAPER NUMBER**
2684	

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/599,148	Applicant(s) LINSKY ET AL.	
	Examiner Raymond S Dean	Art Unit 2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *0804,1004*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see drawings, filed August 31, 2004 with respect to the incomplete reference numbers in the figures have been fully considered and are persuasive. The objection to said drawings has been withdrawn.

Applicant's arguments regarding the rejection of Claims 1 – 22 under 35 U.S.C. 103(a) filed August 31, 2004 have been fully considered but they are not persuasive.

The packet switch taught in Rosen will route the uplink data to the queue, which is contained in memory, for storage and later transmission on the downlink (See Column 4 lines 8 – 15, Column 6 lines 56 – 58). The routing tables, which are stored in memory, determines through the address translation what downlink beam hop location said data should be transmitted to (See Column 4 lines 8 – 20).

Berman shows in Figure 5 the circuitry used to dynamically adjust the power supplied to the amplifier to reduce power consumption and to meet peak traffic demands. The circuitry will adjust power supplied to the amplifiers such that there will be an increase (addition of RF power) or decrease (removal of RF power) in the RF power of at least a portion of the transmitted signal thus said circuitry is acting as the power gating circuitry. The signals that are sensed by the detectors enable the circuitry to allocate amplification power to the amplifiers thus enabling the regulation of the transmitted RF power from said amplifiers and the management of the power consumption of said amplifiers therefore said sensed signals are acting as the power

gating signals. The amplification power is allocated to said amplifiers prior to amplification of the desired downlink signal and therefore prior to the transmission of said downlink signal (See Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, Column 4 lines 43 – 67, and Column 5 lines 1 – 13).

Rosen and Berman both teach a satellite system with multiple downlink beams thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the amplifier with the power gating method taught in Berman in the satellite system of Rosen for the purposes of meeting peak traffic demands and reducing power consumption during low traffic periods as taught by Berman.

Rosen in Figure 3 shows a modulator, which is a waveform generator, coupled to the packet switch (30).

Berman, as set forth above, teaches a power gating input for carrying a power gating signal for removing power from at least a portion of the waveform before transmission.

Rosen and Berman both teach a satellite system with multiple downlink beams thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the power gating input and method taught in Berman in the satellite system of Rosen for the purposes of meeting peak traffic demands and reducing power consumption during low traffic periods as taught by Berman.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosen et al. (US 6,430,393 B1) in view of Berman et al. (6,091,934).

Regarding Claim 1, Rosen teaches a downlink beam frame signal processing system for a communication satellite, the processing system comprising: a packet switch routing self addressed uplink data to a memory, the memory comprising at least a first and a second downlink beam hop location storage (Column 3 lines 37 – 44, Column 4 lines 8 – 20, since this is a satellite system with downlink beams there will be a first and second downlink beam hop, the beam hop location is determined by the routing table which is stored in memory).

Rosen does not teach a power amplifier for amplifying a waveform based in part on the uplink data for transmission; and a power gating circuit coupled to the power amplifier and including a power gate input responsive to a power gating signal to remove RF power from at least a portion of the waveform, thereby reducing DC power consumption of the power amplifier.

Berman teaches a power amplifier for amplifying a waveform based in part on the uplink data for transmission (Column 3 lines 8 – 15); and a power gating circuit coupled

to the power amplifier and including a power gate input responsive to a power gating signal to remove RF power from at least a portion of the waveform, thereby reducing DC power consumption of the power amplifier (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22).

Rosen and Berman both teach a satellite system with multiple downlink beams thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the amplifier with the power gating method taught in Berman in the satellite system of Rosen for the purposes of meeting peak traffic demands and reducing power consumption during low traffic periods.

Regarding Claim 2, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 1. Berman further teaches wherein the power gating signal is indicative of unavailability of uplink data in the memory (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is unavailability of uplink data in memory that means there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 3, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein unavailability of uplink data comprises too little uplink data to fill a payload field in the waveform (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is too little data to fill a payload field that means there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 4, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein unavailability of uplink data comprises the absence of uplink data in the memory (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is an absence of uplink data in memory there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 5, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein unavailability of uplink data comprises too little uplink data to fill at least two payload fields in the waveform (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is too little uplink data to fill at least two payload fields there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 6, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein the power-gating signal is indicative of a predetermined satellite power requirement (Column 3 lines 53 – 67, Column 4 lines 8 - 22).

Regarding Claim 7, Berman teaches all of the claimed limitations recited in Claim 6. Berman further teaches wherein the power requirement comprises an eclipse power requirement (Column 4 lines 8 – 22, the saturation point is the eclipse power requirement).

Regarding Claim 8, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein the power-gating signal is indicative of a statistical

multiplexed estimate of downlink utilization (Column 3 lines 22 – 35, Column 3 lines 53 – 67, since this can be a TDM system there will be an inherent statistical multiplexed estimate).

Regarding Claim 9, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein the power gating signal is indicative of a desired average first hop location queue depth formed in the memory (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, the hop location queue depth is directly dependent on the amount of data traffic on the uplink channel thus this is an inherent characteristic).

Regarding Claim 10, Rosen teaches a method for processing a downlink beam frame signal, the method comprising: switching self addressed uplink data into at least one of a first and second downlink hop location storage area in a memory (Column 3 lines 37 – 44, Column 4 lines 8 – 20, since this is a satellite system with downlink beams there will be a first and second downlink beam hop, the beam hop location is determined by the routing table which is stored in memory).

Rosen does not teach amplifying a frame signal based in part on the uplink data for transmission; and prior to transmission, power gating at least a portion of the frame signal in response to a power-gating signal.

Berman teaches amplifying a frame signal based in part on the uplink data for transmission; and prior to transmission, power gating at least a portion of the frame signal in response to a power gating signal (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22).

Rosen and Berman both teach a satellite system with multiple downlink beams thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the amplifier with the power gating method taught in Berman in the satellite system of Rosen for the purposes of meeting peak traffic demands and reducing power consumption during low traffic periods.

Regarding Claim 11, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to too little uplink data in the memory to completely fill the payload in the frame signal (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is too little data to fill a payload field that means that there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 12, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to too little uplink data in the memory to fill the payload in the frame signal beyond a predetermined threshold (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is too little data to fill a payload field beyond a predetermined threshold there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 13, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to too little uplink data in the memory to completely fill at

least two payload fields in the frame signal (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is too little uplink data to fill at least two payload fields there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 14, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to satellite power requirements (Column 3 lines 53 – 67, Column 4 lines 8 - 22).

Regarding Claim 15, Berman teaches all of the claimed limitations recited in Claim 14. Berman further teaches power gating at least a payload of the frame signal in response to satellite eclipse power requirements (Column 4 lines 8 – 22, the saturation point is the eclipse power requirement).

Regarding Claim 16, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to a statistical multiplexed estimate of downlink utilization (Column 3 lines 22 – 35, Column 3 lines 53 – 67, since this can be a TDM system there will be an inherent statistical multiplexed estimate).

Regarding Claim 17, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches wherein power gating maintaining at least one synchronization field in the frame signal (Column 3 lines 22 – 35, Column 3 lines 53 – 67, TDM systems comprise data frames thus there will be an inherent field for frame synchronization).

Regarding Claim 18, Rosen teaches a downlink beam frame signal processing system for a communication satellite, the processing system comprising: a packet switch routing self addressed uplink data to a memory, the memory comprising at least first and a second downlink beam hop location storage (Column 3 lines 37 – 44, Column 4 lines 8 – 20, since this is a satellite system with downlink beams there will be a first and second downlink beam hop, the beam hop location is determined by the routing table which is stored in memory); and a waveform generator coupled to the packet switch, the waveform generator comprising a modulator for producing a waveform to be transmitted (Figure 3).

Rosen does not teach a power gating input for carrying a power-gating signal for removing power from at least a portion of the waveform before transmission.

Berman teaches a power gating input for carrying a power-gating signal for removing power from at least a portion of the waveform before transmission (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22).

Rosen and Berman both teach a satellite system with multiple downlink beams thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the power gating method taught in Berman in the satellite system of Rosen for the purposes of meeting peak traffic demands and reducing power consumption during low traffic periods.

Regarding Claim 19, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 18. Berman further teaches a filter (Column 3 lines 55 – 58).

Regarding Claim 20, Berman teaches all of the claimed limitations recited in Claim 19. Berman further teaches frequency content removed in a pass band region of the filter in response to the power-gating signal (Column 3 lines 53 – 67, Column 4 lines 8 – 22, as the uplink traffic changes there will be a corresponding removal of the frequency content thus this is an inherent characteristic).

Regarding Claim 21, Berman teaches all of the claimed limitations recited in Claim 19. Berman further teaches wherein a first payload section of the waveform has frequency content removed in a pass band region of the filter in response to the power gating signal (Column 3 lines 53 – 67, Column 4 lines 8 – 22, as the uplink traffic changes there will be a corresponding removal of the frequency content thus this is an inherent characteristic).

Regarding Claim 22, Berman teaches all of the claimed limitations recited in Claim 21. Berman further teaches wherein a second payload section of the waveform has frequency content removed in the pass band region of the filter in response to the power gating signal (Column 3 lines 53 – 67, Column 4 lines 8 – 22, as the uplink traffic changes there will be a corresponding removal of the frequency content thus this is an inherent characteristic).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NAY MAUNG
SUPERVISORY PATENT EXAMINER

Raymond S. Dean

December 20, 2004